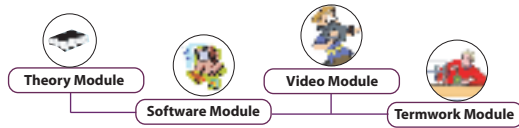


# Manufacturing Processes

Introduces, Global e-Learning System in Education & Training in the form of Learning Resources with Computer Aided Instructions



System Requirement:- IBM-PC Compatible with Window-OS, 128 MB RAM/Multimedia Kit

## Theory module

**Features :** Theory, Figures, Photographs, Animations with controller, Highlighter tool, Note creation facility, Systematic page navigation, Printing facility, Access to Videos at appropriate locations.

## List of Topics

### Manufacturing Processes-I

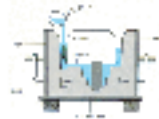
#### Classification of manufacturing Processes



Selection criteria for manufacturing processes, product geometry & characteristics, production rate, production volume etc.

#### Foundry

Introduction to casting process & its applications. Selection of materials for casting. Patterns - Materials, types of patterns, pattern allowances, colour code for patterns.



#### Sand casting



Desirable properties of moulding sand, type of sand moulds, sand testing, types of core, prints, preparation of cores.

#### Melting, pouring and feeding

Construction and operation of cupola and arc furnace, pouring and handling equipment, introduction to gates and risers.



#### Metal Cutting and Machine Tools



Introduction to machinability : elements of metal cutting : machine tool, cutting tool, workpiece, cutting tool materials, cutting fluids.

#### Finishing Process

Introduction and applications of Honing, lapping, buffing, superfinishing, metal coating, electroplating, chrome plating, anodizing, powder coating.



## Manufacturing Processes-II

### Metal Forming



Introduction Classification of forming process, metallurgical fundamentals of forming, effect of speed and temperature on forming, hot and cold working processes, and their advantages and disadvantages.

### Rolling

Classification of rolling processes, rolling mills, products or rolling and main variable rolling defects, rolling mill control.



### Drawing



Drawing of rods, wires and tubes, Draw benches, main variables in drawing operations.

### Forging

Open and closed die forging, forging operations, hammer forging, press forging and drop forging, forging defects, their causes and remedies.



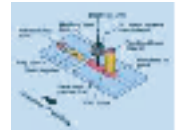
### Extrusion



Classification of extrusion processes, extrusion equipment, variable in extrusion process.

### Welding

Welding and Weldability, classification of welding processes. Gas welding: Working principle, equipment welding techniques types of flames,



### Sheet metal forming operations



Spinning, deep drawing, bending, Introduction to press working, Types of presses, press working operation. Press working tools. Introduction to powder metallurgy and high velocity forming

### Heat treatment

Iron carbon diagram, TTT Curves. Classification of heat treatment processes, Principles, process details and application of annealing normalizing, hardening, tempering.

